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# **TRMM Flight Operations Monthly Status Review (MSR)**

February 11, 2003



# FOT Subsystem Overview

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- Operations Status
  - Flight Ops Summary - Lou Kurzmiller
  - Electrical/Thermal - Dave Sepan
  - RCS - Dave Sepan
  - ACS - Dave Sepan
  - Power & Deployables - Justin Knavel
  - FDS - Joe Kowalski
  - C&DH - Nega Berhanu
  - RF/Comm - Nega Berhanu
  - LIS - Nega Berhanu
  - CERES & VIRS - Justin Knavel
  - TMI - Dave Sepan
  - PR - Joe Kowalski
  - Ground System - Justin Knavel
  - Upcoming Activities - Justin Knavel



# Flight Operations Summary

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- Supported 526 SN events in January
  - 2 Yaw Maneuvers; now –X as of 20 Jan 03
  - 3 Delta-V Maneuvers; #424 through #426
- No Anomaly Rpts, 5 Event Reports & 1 generic Late Acq
  - ER #292: MOC Equip; CD1 failed (07 Jan)
  - ER #293: NASCOM; Multiple sequence errors Q-Chnl (11 Jan)
  - ER #294: SN Late Acq (14 Jan)
  - ER #296: MOC; Patch Load not uplinked (18 Jan)
  - ER #295: WSGT; Line misconfiguration (31 Jan)



# Flight Operations Summary

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- Notable Events
  - Called MOC Operator Error
  - TRMM Controlled Re-Entry Plan Review
  - Continued support of AutoFDS implementation effort
  
- No changes to FOT personnel status in January.



# Thermal / Electrical Subsystems

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- The Thermal subsystem remains nominal
- The Electrical subsystem remains nominal



# RCS Subsystem

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- RCS performed 3 successful Delta-V maneuvers (#424 - #426)
  - Current fuel remaining is 222 kg by the mass flow method.
  - Current fuel remaining by the PVT method is 199 kg.
  - Current Precision Pressure Transducer level is down to 157.6 psia.
- RCS subsystem is in “blow down” mode and is no longer pressure regulated.
- The current EOL estimate at 402.5 km is May 2004 using 134 kg of fuel as a baseline for controlled re-entry.
- Upcoming Events
  - Review and train with Delta-H procedure, EOL scripts, and the “one-shot” procedure.
  - Review all required steps for a 30+ minute Delta-V maneuver and test with the simulator.



# ACS Subsystem

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- ACS is performing nominally.
- Upcoming events:
  - TAM-B calibration



# Power Subsystem

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- Open issues
  - Battery Charging if the PSIB B degrades further
    - » Leave in CCM
    - » PPT with Both SA Feathered
    - » PPT with  $-Y$  SA Feathered and  $+Y$  SA tracking  $\pm 50$  degrees



# Deployables Subsystem

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- -Y SA Sticking Anomaly On-going Work
  - Configure ACE for 15° in Safehold.
  - Workaround for GSACE Switch was loaded on 03-036 (Wed. February 5<sup>th</sup>).
    - » ACS TSM 4 will call ACS RTS 5 which will start SC RTS 22/23
    - » SC RTS 3 was modified to disable ACS TSM 4 if the S/C goes to SunAcq
    - » All RTSs and ACS System Table 21 will be loaded to EEPROM in the near future.



# FDS Subsystem

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- The FDS Subsystem remains nominal
- New tables loaded to S/C on 03-036 (February 5<sup>th</sup>); more information in Deployables section
  - S/C RTS #22 and 23
  - ACS RTS #5
  - ACS System Table #21 (ACS TSM #4)



# C&DH Subsystems

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- UTCF/FS Status;
  - 2 UTCF Adjustments were performed on 03-008 (Wed., Jan. 8<sup>th</sup>) and 03-024 (Fri., Jan. 24<sup>th</sup>) .
    - » Current UTCF value is 31535996.793153 sec
  - No FS Adjustment was performed during this report period.
    - » Current FS value is x'802'.
  - No Open issues



# RF Subsystem

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- 1 Late Acquisition occurred during this report period.
  - GLA #130: Occurred on 03-015 (Jan., 15) during the 0200z 171/SA1 event. Acquisition was 112 seconds late. 1 GCMR was sent; all data was recovered (CDS-30835).
- 1 RF Event Reports since last MSR.
  - ER #294: Occurred on 03-015 (Jan., 15) during the 1951z TDE/SA2 event. Sent 2 forward reacq. GCMRs and acquired lock at 19:58:31z (7min 1sec. late ). WSGT advises that they did not have lock at AOS, but did see RF; all data was recovered.
- Frequency offsets (monthly average)
  - Transponder #1 = - 50.100 Hz
  - Transponder #2 = + 158.800 Hz
- No open issues



# LIS Instrument

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- 1 Routine MSFC real-time command request was performed on 03-027 (January 27<sup>th</sup>) to reduce packet sequence errors.
- No open issues



# CERES/VIRS Instruments

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- **CERES.**
  - Powered OFF.
- **VIRS**, continues to operate nominally.
  - Two VIRS Solar Calibrations were performed on 03-004 (Sat., January 4<sup>th</sup>).



# PR/TMI Instruments

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- No open issues with the PR instrument
- PR LNAANALYSIS performed on 03-018 (Jan 18<sup>th</sup>)
- No open issues with the TMI instrument



# Ground System / Security

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- 03-007 (Tue., January 7<sup>th</sup>) SCD1 failed and was replaced.
- NIS was removed from String 2 due to security issue. A script will be developed to update passwords on all terminals at one time.
- Titan will conduct Security Audit in the near future.



# Upcoming Activities

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- 0-2 Months
  - Perform remaining FSW revisions due to new Kalman Filter mode of operations and Boost activities
    - » Table 51 DSS Tolerance Versions
    - » TAM B Calibration
  - Load new GSACE Switch RTSs for +Y Stuck Array to EEPROM
  - Test with TDRS 275 for End of Life
  - Place remaining permanent table / patch changes into EEPROM
  - Support finalization of TRMM End of Life and Reentry Plan
  - Aid in Development and Testing of Auto-FDS



# Upcoming Activities

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- 2-3 Months
  - Participate in End of Life Plan review(s)
  - End Of Life Plan Testing, and Simulations
  - Continue to close open CCRs, MOCRs, and MSR Action Items